

MONTHLY WEATHER REVIEW.

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INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States and Canada during October, 1884, based upon the reports from the regular and volunteer observers of the Signal Service and from co-operating state weather services.

Descriptions of the storms which occurred over the north Atlantic ocean during the month, are also given, and their approximate paths shown on chart i.

The principal feature of the month was the number of areas of low pressures that occurred, with the average track high to the north, over the lakes and down the Saint Lawrence valley. The average number of barometric depressions and their average velocity per hour were in excess.

The temperature was decidedly above the mean, which is shown by the chart of departures from the normal.

The long and severe drought has continued in some of the southern states, with the absence, or only traces, of rain in some localities.

The atmospheric pressure was above the normal in the eastern and central portions of the country. The line of normal pressure runs nearly parallel to the forty-fifth degree of north latitude.

The severest storms of the month occurred during the 5th; 7th, and 8th; on the 13th; 20th and 21st; 23d, 24th, and 25th.

The principal cold waves were: from the 6th to 10th, crossing the country from Montana to Florida; that from the 13th to 16th, in the eastern sections; also that from the 19th to 24th, which moved first south and then east over the country east of the Rocky mountains.

The excessive rainfall in the lower Rio Grande valley was also a distinguishing feature of the month.

No tropical storm reached the United States during the month. Under "north Atlantic storms" are described, as numbers 5 and 5a, two tropical cyclones, which prevailed in the vicinity of Cuba.

In the preparation of this REVIEW the following data, received up to November 20th, 1884, have been used, viz.: the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and twenty-nine Signal Service stations and fourteen Canadian stations, as telegraphed to this office; one hundred and fifth-nine monthly journals; one hundred and fifty-seven monthly means from the former, and fourteen monthly means from the latter; two hundred and fifty-eight monthly registers from voluntary observers; forty-three monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports, through the co-operation of the "New York Herald Weather Service;" abstracts of ships'

logs, furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Alabama, Indiana, Louisiana, Missouri, Nebraska, Ohio, and Tennessee, and of the Central Pacific Railway Company; trustworthy newspaper extracts; and special reports.

ATMOSPHERIC PRESSURE.

[Expressed in inches and hundredths.]

The mean atmospheric pressure for October, 1884, determined from the tri-daily telegraphic observations of the Signal Service, is exhibited by the isobarometric lines on chart ii. The mean pressure for the month is greatest between the parallels of 33° and 40° north latitude, east of the Mississippi river, this region being inclosed by an isobar of 30.15. The highest barometric mean for the month, 30.19, is reported from Knoxville, Tennessee, and Charlotte, North Carolina. To the northward of the area of greatest pressure, the barometric means decrease to slightly below 30.05, in the lake region and lower Saint Lawrence valley; and to slightly below 30.0 in the extreme northwest and Canadian Maritime Provinces. Along the Gulf coast the barometric means vary from 30.07 to 30.12; at Key West, Florida, the monthly mean is 29.98. The isobar of 30.1 includes nearly the whole of the country lying between the parallels of 30° and 38° north latitude, east of the one-hundredth meridian. From the western portions of Kansas and Nebraska northwestward to the north Pacific coast the monthly barometric means are slightly above 30.05. The area of least mean pressure, inclosed by the isobar of 29.95, includes the southern portions of Arizona and California, the mean pressures varying from 29.94 at Forts Apache, Grant, and Thomas, Arizona, to 29.96 at San Diego, California. Along the Pacific coast, north of Los Angeles, the mean pressure varies but slightly from 30.0.

Compared with the preceding month the mean pressure is higher in all districts, except southern Florida and Nova Scotia, where there is a slight decrease. The increase is greatest over the eastern Rocky mountain slope, where it varies from .18 to .22; in the western plateau districts, the lake region and central valleys, the increase is from .08 to .17; and along the Atlantic and Pacific coast from .02 to .08.

Compared with the normal pressure for October (see chart iv.), deficiencies varying from .01 to .05 are shown along the northern border of the country from northeastern Montana to New England. There is also a slight deficiency in California and in southern Florida. In all other portions of the country the mean pressure is above the normal, the departures being greatest over northern Texas, and portions of Arkansas, Indian Territory, and Louisiana, where they vary from .10 to .13. On chart iv. the line inclosing the region over which the departures exceed .05, is drawn from southern New Mexico northward to eastern Wyoming, thence southeastward in an irregular course to the south Atlantic coast, and thence southward to the lower Rio Grande valley.

BAROMETRIC RANGES.

The monthly barometric ranges are greatest in the upper lake region, extreme northwest, northern and middle plateau districts, and on the north Pacific coast, where they are from 1.00 to 1.12; they are least in southern Florida, and on the